

What is claimed is:

1. Water based ink for ball-point pen comprising a solvent formed by a water and an alcoholic solvent having a vapor pressure at 20°C of 0.5 kPa or higher, a pigment constituting a coloring material, and a water-soluble resin constituting a writing fixing agent, wherein an ink viscosity at 20°C is within a range of 5 to 30 mPa·s.

2. Water based ink for ball-point pen according to claim 1, wherein the water-soluble resin is present by 5 to 20 mass% with respect to a total amount of the ink composition.

3. Water based ink for ball-point pen according to claim 1, wherein the water-soluble resin is an acrylic resin.

4. Water based ink for ball-point pen according to claim 3, wherein the acrylic resin has a molecular weight of 5000 to 20000, a glass transition point of 40 to 150°C and an acid value of 50 to 250.

5. Water based ink for ball-point pen according to claim 1, wherein the solvent formed by a water and the alcoholic solvent constitutes 60 to 90 mass% of the entire amount of the ink composition, and the alcoholic solvent constitutes 5 to 15 mass% of the entire amount of the ink composition.

6. Ball-point pen according to claim 1, wherein the pigment constitutes 1 to 10 mass% of the entire amount of the ink composition.

7. Ball-point pen including, at a tip portion of an ink tube, a ball-point pen tip rotatably supporting a ball either directly or across a tip holder, wherein an ink according to claim 1 is directly filled in the ink tube.

8. Ball-point pen according to claim 7, wherein the ball-point pen tip includes a valve mechanism which presses the ball, rotatably supported in the pen tip, in a non-use state to an internal wall of a pen tip ridge by a coil spring impinging on a rear end of the ball either directly or across a pressing member and which forms a gap between the internal wall of the pen tip ridge by a pressure at a writing thereby allowing the ink to flow out.

9. Ball-point pen according to claim 7, wherein the ink tube is provided with an ink following member, in contact with an ink surface at a tail portion opposite to a mounting part at the front tip for writing.

10. Ball-point pen according to claim 7, wherein the ball pen tip is formed by a stainless steel material and the ball has a surface roughness of 5 nm or less in an arithmetic average.

11. Ball-point pen according to claim 7, adapted for use on a non-permeable writing surface.